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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/294,617	04/19/1999	ANDREW T. JENNINGS	TN137	6329

7590 01/15/2004

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EXAMINER	
KENDALL, CHUCK O	

ART UNIT	PAPER NUMBER
2122	15

DATE MAILED: 01/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PRG

Office Action Summary	Application No. 09/294,617	Applicant(s) JENNINGS ET AL.	
	Examiner Chuck O Kendall	Art Unit 2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15 and 18-31* is/are rejected.

7)☒ Claim(s) *16 and 17* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Examiners Response

1. This Office Action is the response to the communication received on 10/14/2003 Reconsideration of the instant application is requested by applicants. All such supporting documentation has been placed of record in the file. Claims 1-31 are pending in this application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1,2,5,9,10,13,19,20,23, & 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Goettelmann et al. 5,313,614.

With regards to claim 1, Goettlemann anticipates a system (FIG.1), method (Col.31:60-32:45), product (Col.2:45-65) (for emulating (FIG.5, part # 53) the execution of a target program comprising instructions of an instruction set of a target computer on a host computer having a different instruction set (FIG.5, 58), said method comprising;

performing a static translation of the instructions of the target program into a series of instructions of an intermediated instruction set, the intermediate instruction set being optimized for interpretation on the host computer (Col:20-55-65);

executing the series of instructions of the intermediate instruction set by interpretation on the host computer (Col.31:50-55).

With regards to claims 2 & 27, wherein the intermediate instruction set comprises a plurality of control words that are derived, at least in part, by mapping control words of the instruction set of the target machine into the fundamental word size of the host machine (Col.20: 5-15).

With regards to claim 5, as recited in claim 1 wherein the intermediate instruction set comprises a plurality of controls words derived from control words of the instruction set of the target machine in a manner that reduces the number of different forms of control words in the intermediate instruction set (Goettlemann, Col.15:65 -16:5).

Regarding claim 9, which is the system version of the method in claim 1, see rationale as discussed above.

Regarding claim 10, which is the system version of the method in claim 2, see rationale as discussed above.

Regarding claim 13, which is the system version of the method in claim 5, see rationale as discussed above.

Regarding claim 19, which is the computer readable version of the method in claim 1, see rationale as discussed above.

Regarding claim 20, which is the computer readable version of the method in claim 1, see rationale as discussed above.

Regarding claim 23, which is the computer readable version of the method in claim 5, see rationale as discussed above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 3, 4 - 8, 11, 12, 14 -18, 21, 22, 24 - 26, & 28 - 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goettelmann et al. 5,313,614.as applied in claim 1, in view of Horwat USPN 6,021,275.

With regards to claim 3, Goettlemann discloses all the claimed limitations as applied in claim 1. Goettlemann doesn't explicitly disclose wherein the intermediate instruction set comprises a plurality of control words that are derived by redefining control words of the target computer to minimize the number of masking and shifting operations needed to decode the plurality of control words of the intermediate instruction set. However Horwart does disclose this feature (Horwart, 21:62-67 to 22:1-5, also see 20-25 for word contained in each record). Therefore it would have been obvious to one of ordinary skill art at the time the invention was made to combine Goettlemann with Horwart because, redefining the control words for that particular system would make interpreting the code more efficient.

With regards to claim 4, Goettlemann discloses all the claimed limitations as applied in claim 1. Goettlemann doesn't explicitly disclose wherein the intermediate instruction set comprises a plurality of different types of control words having formats defined to minimize the time needed to determine the type of a control word. However Horwart does disclose this feature (Horwart, 20:45-63). Therefore it would have been obvious to one of ordinary skill art at the time the invention was made to combine Goettlemann with Horwart because, defining the control words for a plurality of different formats would make mapping or interpreting for more than one system or architecture.

With regards to claim 7, Goettlemann discloses all the claimed limitations as applied in claim 1. Goettlemann doesn't explicitly disclose wherein the instructions of the intermediate instruction set have a fixed length and do not cross code word boundaries. However Horwart does disclose this feature (Horwart, 24:63-65, see aligning on byte boundaries). Therefore it would have been obvious to one of ordinary skill art at the time the invention was made to combine Goettlemann with Horwart because, "The mapping process must replicate all such side effects faithfully because the creator of the program being translated may have indeed relied on them in unforeseeable ways" (Goettleman, Col.20:11-15).

With regards to claim 7, Goettlemann discloses all the claimed limitations as applied in claim 1. Goettlemann doesn't explicitly disclose wherein zero-address instructions of the instruction set of the target machine for pushing data onto a stack for use in a subsequent zero-address instruction operation are incorporated as explicit addresses into a new instruction in the intermediate instruction set for performing that operation, thereby reducing the number of different instructions in the intermediate instruction set. However, Horwart does disclose this feature (Horwart, see table on the bottom of column 30 for allocating stack and zero address instruction). Therefore it would have been obvious to one of ordinary skill art at the time the invention was made to combine Goettlemann with Horwart because, using zero instructions for subsequent, zero address instructions would reduce instruction overhead and redundancies.

Regarding claim 12, which is the system version of the method in claim 4, see rationale as discussed above.

Regarding claim 14, which is the system version of the method in claim 6, see rationale as discussed above.

Regarding claim 15, which is the system version of the method in claim 7, see rationale as discussed above.

Regarding claim 18, which is the system version of the method in claim 8, see rationale as discussed above.

Regarding claim 20, which is the computer readable version of the method in claim 3, see rationale as discussed above.

Regarding claim 20, which is the computer readable version of the method in claim 4, see rationale as discussed above.

Regarding claim 24, which is the computer readable version of the method in claim 6, see rationale as discussed above.

Regarding claim 25, which is the computer readable version of the method in claim 7, see rationale as discussed above.

Regarding claim 26, which is the computer readable version of the method in claim 8, see rationale as discussed above.

Regards, to claim 28 see reasoning in claim 3.

Regards, to claim 29 see reasoning in claim 4

Regards, to claim 30 see reasoning in claim 6.

Regards, to claim 31 see reasoning in claim 8.

Allowable subject matter

6. Claims 16, & 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

wherein the code translator runs as a user mode process under control of a host operating system on the host computer, and wherein the interpreter runs as a kernel mode driver thread under the host operating system.

wherein the emulation system may comprise multiple instances of the interpreter each running as a different thread in the kernel space of the host operating system.

Response to Arguments

7. Regarding rejection of the claims 1-15, &18-31 under 35 U.S.C. § 103(a), Examiner has evaluated applicant's arguments and Applicant's arguments with respect to claims 1-15, & 18-31, and withdraws previous rejection.

Correspondence Information

Correspondence Information

8. Any inquires concerning this communication or earlier communications from the examiner should be directed to Chuck O. Kendall who may be reached via telephone at (703) 308-6608. The

examiner can normally be reached Monday through Friday between 8:00 A.M. and 5:00 P.M. est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam *can be* reached at *(703) 305-4552.*

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

For facsimile (fax) send to central FAX number 703-872-9306 *and* 703-7467240 draft.

Chuck O. Kendall

Software Engineer Patent Examiner

TUAN DAM
SUPERVISORY PATENT EXAMINER